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ON

HEPATITIS

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William Ashmead.

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Diseases of the liver are most frequent in autumn or near the vernal and autumnal equinox, when the weather is changeable and excessive heat is succeeded by severe cold.

The liver like other internal organs, is also liable to inflammation and it is more so, than any part of the body, in warm climates; where hepatitis occurs more frequently than in cold countries, particularly in the E & W India here after a long residence, few strangers from temperate latitudes escape the disease and as the lungs are more frequently the seat of disease in the middle regions, so is the liver in the tropics.

The inflammation of this gland, is of two kinds, more or less acute and chronic

The former by its active operation and rapid influence, unless quickly counteracted, soon destroys the energies of the system. And in this climate the acute is comparatively rare in respect to the chronic.

Acute. the characteristics are pyrexia or a febrile affection, tension and pain of the right hypochondrium, which is often pungent as in

pleuritis, but sometimes dull; pain in the clavicle and top of the right shoulder, uneasiness in lying on the left side, difficult respiration, dry cough, vomiting, hiccup and frequently some degree of jaundice; which exhibit the essential character of true inflammation.

Causes. Many of the same causes producing pneumonia and other visceral inflammations, also excite acute hepatitis, as a plethoric habit and the application of cold to a body heated or fatigued, whence the two diseases sometimes exist together. But some causes are more particularly connected with the production of hepatitis than of other inflammations.

The acute species is more often the effect of tropical climates and intense summer heats which, by their excessive stimulus on the hepatic system through the sympathy of the skin, accelerate the sluggish circulation of the liver and excite it to morbid and irregular action often with a hurried secretion and consequently with imperfect bile: thus heat deranges its functions and thereby predisposes the organ to inflammation. Saun.ds+ supposes heat an exciting cause, but Jhn.n‡ says from attentive observation, that even in tropical regions, nine cases in ten of the acute, owe their immediate existence to the application of cold. As

+ Saunders on the Liver page 293.

‡ Johnson on the Liver page 67

a high range of temperature acting on a healthy constitution, spontaneously increases, independently of any intemperance, the cutaneous and biliary secretion beyond the natural standard and debilitates the secretory capillaries, in consequence of which the perspiratory and biliary secretions continue after the cause or necessity has ceased, and thus causes them sooner to become torpid on the application of cold; hence the perspiration and the biliary secretion are arrested, the consequence of which is a temporary obstruction to the free transmission of blood from the portal to the general circulation; the frequent repetition of which is a source of hepatic inflammation especially in hot climates (The Asiatic and African, though inured to the high temperature of their climates, still guard against excessive perspiration and its too frequent consequence, suppression, by keeping the skin soft and unctious and thus maintaining an equal flow of perspirable matter and bile, the latter is proved by the regularity of their bowels and less liability to hepatic diseases). Here then we have two very opposite states of the liver and its functions; 1st an inordinate action with increased secretion, the periods gradually shortening; 2nd torpor in the vessels of the liver, with deficient secretion, the periods progressively lengthening; and in both cases the bile is vitiated.

Intemperance, especially in the use of vinous or ardent spirits; though ardent spirits has always been considered foremost amongthe internal exciting causes of hepatic inflammation, more probably it seldom is the cause of the acute; although a peculiar chronic derangement very difficult to be managed and often terminating in dropsy, and especially of function, are in a great measure occasioned by it. Choleric or irritable disposition in the male sex, is also a predisposing cause, showing the close sympathy between the mental and hepatic functions. Worms obstructing the ducts; case, in a military man two lumbrici were discovered, one in the cystic, the other in the hepatic duct, and others in the intestines, V.S. Among the many excellent preparations of Professor Gibson, there is one in which the biliary ducts of the liver are completely filled with lumbrici. Derangement of the digestive organs. Suppressed secretions. Redundant and highly acrid biliary secretion from the stimulus of heat, irritates the liver and induces disorder; in what this vitiation consists it is difficult to say, in high degrees of it attending a hurried secretion, the bile occasionally assumes all the shades between deep green and jet black, possessing, at one time, an acidity which sets the teeth on edge, or more frequently an acrimony that seems to excoriate

the stomach and fauces, or that gives the sensation of a boiling fluid passing through the intestines. Violent operation of emetics. Inflammation. Compression. Collections of liquid matter in the liver. Long continued intermittant and remittand fevers, from the repeated accumulation of blood in the cold stage; in autumnal epidemic fevers after the hotest summers, a slight inflammation of the liver is often an attendant and when the fever is removed without removing the obstruction of the liver, the patient remains unhealthy, of a pale or yellow waxen colour, languishes and is with great difficulty restored to a sound state of health. Great passions mental emotions or disturbances of mind are frequent causes of obstruction and disease of the liver; especially the depressing passions, as grief strongly predisposes to hepatitis and excites it, their first effect is often felt in the organs of digestion, — atony in the stomach and torpor in the liver and intestines. The food passes into the duodenum imperfectly digested and meets with a scanty supply of ill conditioned bile, the chyle is imperfectly eliminated, faeces accumulate and possibly fermentation takes place with the extrication of air, distressing colic and borborigmi; to procure relief from these, spiritous tinctures and cordials are used which frequently lead to more dangerous indulgences and increas the malady they were

intended to alleviate: "case, by the neglect of the captain of a gun, it discharged, while two men were in the act of loading it, both had their arms blown away and were otherwise dreadfully shattered and one died, which produced such remorse and grief in the mind of the captain that he was immediately seized with hepatitis, though he was in the prime of life and health and in a few days he expired," Jhs:+ the liver, like the lungs, in Europe, being predisposed to disease from the general effects of the climate, suffers readily and obviously in consequence of the close sympathy between the liver and the brain, which is strongly illustrated in hot climates. Various calculous concretions in the substance of the liver; "case a hard stone was found in the substance of the liver weighing ℥ij, without attachment to the pori or ducts, though such rarely occur," Rusch:‡ chalky friable concretions are found especially in the livers of stall fed cattle when living on dry food without exercise, but they disappear when living on fresh grass and taking exercise, since they are not found in the spring; large calculi in the g: bladder; steatoma or a scrofulous state of the glands; case a man had a scrofulous neck for many years and after death, the liver was found withered on the outside and full of glandular tubercles containing a substance like jelly and plaster, the liver was

+ Johnson on the Influence of Tropical climates page 307.
‡ Van Swieten's Commentaries on Boerhaave's aphorisms. 915th aphorism

enlarged and double its usual weight: these calculi, scirrhi & by long compressing the contiguous parts, obstruct the free circulation of the blood through the liver and vena portarum and even prevent the expulsion of the bile already separated and an obstruction being thus formed, any exciting cause will produce inflammation.

Exciting causes are either external or internal. Partial applications of cold or wet or sudden and intense cold introduced or applied, from the air, bathing or drinks by filling the stomach suddenly with cold liquids, especially with ice water; during or subsequent to being in a great heat or sweat or overfatigued by violent or unusual exercise; these are the exciting causes in 5/8 of the cases that occur, except when produced by external violence or falls, especially such as occasion fracture of the cranium; case fell about 12 ft and struck his right side against a ladder, he had more or less pain, though no attention was paid to it for several months, when violent hepatitis arose and terminated in suppuration and death. Violent exercise. High living. And lastly the acute is often induced by chronic inflammation. Sudden vicissitudes are highly injurious to the system in general and to the hepatic in particular. Yet an annual change is eminently beneficial in relieving

the hepatic system from excessive action and in bracing the whole frame relaxed by previous heats. Sa[+] & Cu[‡] suppose inflammation of the liver is generally preceded by congestion.

Symptoms. Hepatitis generally commences with most of the ordinary symptoms of visceral inflammation, rigors, some degree of shivering or sense of chillinesf sometimes so slight as to evade recollection with palenesf of countenance, shrinking of external parts and small, quick, contracted pulse, evincing a cold stage of venous congestion; succeded by considerable fever and this subsequent reaction will be in proportion to the cold or chilly stage; increased heat and dryness of the skin; considerably active pulse, strong, full, hard and frequent, from 90 a 120; permanent and pungent pain follows in the right hypochondrium, in obscure cases sometimes in the left or in both near the spine, though sometimes it is dull; it is also felt under the margin of the ribs shooting towards the back and ascending mostly to the right clavicle and shoulder blade," whenever this occurred it rendered the nature of the disease very certain", Cr[‖], but "it seems to be produced by almost any morbid excitement of this organ, as from the obstruction of gall stones", Gd[‡] though sometimes it is in the left shoulder when the left lobe is affected;

+ Saunders on the Liver page 293. ‡ Clark on Fevers page 59.
‡ Good's Study of Medicine page 261.
‖ Curtis on the Diseases of India page 93.

when the pain is violent, the patient can not be moved without considerable uneasinefs; it is considerably increased by prefsure on the region of the liver and often extends high into the chest and darting resembles pleurisy and as in this complaint, so the pain frequently is increased from deep inspiration; these symptoms resembling those of pleurisy and other inflammatory affections of the chest, are liable to mislead the unwary practitioner; frequently pain exists for some time in the region of the liver before the commencement of fever: sometimes the liver is perceptibly enlarged; cough seldom appears immediately, unlefs the disease is conjoined with an affection of the lungs, prefsure on the part excites it more frequently and it is more frequently dry than humid, the latter arises from the general inflammatory diathesis causing an increased secretion of the mucus membrane of the lungs, the former from the inflamed membrane of the convex surface irritating the diaphragm; when the cough is loose and expectoration abundant, it may diminish the inflammatory diathesis and materially afsist in promoting resolution: opprefsion and difficulty of breathing, usually quickened and sometimes painful: difficulty of lying, except on the side affected, but when the convex part of the liver is

affected the patient sometimes can only lie on the left side, occasionally the patient is unable to lie on either side and experiences most relief lying on his back a little inclined to the right with the upper extremities considerably raised: the stomach is sometimes extremely irritable, nausea, sickness or violent retching, often with a vomiting of bilious matter: great watchfulness and occasional delirium; loss of appetite; extreme thirst; tongue dry and generally covered with white or yellow fur, extending to the mouth and fauces; dejection of spirits; sometimes hiccup; bowels irregular, often obstinately costive or a diarrhoea and the stools of a clay colour showing an insufficient intermixture of bile with the stools, but sometimes a superabundance of it is thrown into the primae viae occasioning considerable derangement of the evacuations and is ejected by vomiting and stool; bilious flux is almost pathognomonic of tropical hepatitis from the great irritation that prevails and as the gorged vessels are apt to give way from debility the flux is intermixed with blood; (Tonsel says he never saw a case of increased biliary secretion in hepatitis) the urine is scanty, often tinged with bile or of a deep saffron colour and a general attendant on both acute and chronic is a heat or scalding in making water, which seems to be occasioned by the passage of bile

* see pg 11.

along the urinary organs" F.† sallow countenance, sometimes a yellowish hue of the conjunctiva and occasionally actual jaundice, in most cases of actual inflammation the secretion of bile is increased,* though its passage is frequently impeded and thus jaundice is not unfrequent and arises from the bile not getting readily into the common duct from the inflammed liver pressing on the pori biliarii; from mechanical causes, as concussion the biliary secretion is more affected than from causes in general; although the yellow suffusion of the eyes and skin indicates obstruction, its absence is no proof that it does not exist, because when the investing membrane is the principal seat of disease, the secretory office is not so much disturbed as when the parenchema is affected, and inflammation of this organ often occurs without any such symptom, but even when jaundice exists it is not a distinct symptom of hepatitis, as the faeces may be light coloured and the eyes, skin and urine peculiarly yellow from the pressure of an indurated pancreas on the bile ducts: the appearance of the blood is remarkable just before it coagulates, when the red part falling to the bottom and the buffy coat not yet being formed, it appears of a dull green colour and the same takes place in jaundice, sometimes the blood first drawn is not buffy even during active inflammation. But "in tropical climates, I have comparatively

† Faithorn on the Liver page

seldom seen violent rigors, high fever, hard, quick and full pulse, acute pain &c, except in those lately from Europe or within 1,2 years after their arrival and of such, these acute symptoms will be confined principally to the young, robust and plethoric; but generally in the tropics, the disease approaches in a more doubtful appearance, though equally dangerous and often running more rapidly to suppuration and in a few days it would destroy the organ and life, unless skilfully checked: the primary symptoms indicative of the inflammatory affection, are often very slightly marked; the pain felt in the right side is not constant or acute and the patient takes little notice of it and if asked he mentions he has slight pains occasionally about the pit of the stomach or right side and it is only from observing the secondary symptoms, such as flux (in tropical climates) or a short, dry cough and pain at the top of the shoulder, only from a sense of weight or uneasiness about the epigastrium or from fulness and oppression about the lower part of the chest or from tenderness on pressing the liver with a little force with some yellowness of the eyes and countenance, that the state of the disorder is to be ascertained, and which constitutes the difficulty in the management." This appears to be a very accurate description, excepting the flux and ready termination in suppuration, of what is also, often, observed in temperate regions.

Tropical hepatitis partakes more of inflammatory congestion and obstruction, but in temperate climates it partakes more of active inflammation like that of the lungs, hence "in order to induce acute hepatitis it is necessary that the liver at the time of attack should be, at least, in moderate health and vigor." Good's Study of Medicine page 262.

In hepatitis as in all other diseases, the symptoms are not always of the same degree of violence and in every hepatic inflammation the symptoms are more or less severe according to the degree of sensibility of the part affected. When the inflammation occupies the concave inferior part which lies contiguous to the stomach and duodenum, the functions of the stomach are more disturbed, commonly from some inflammation being communicated to the stomach, producing sickness or retching, vomiting, hiccup, great thirst and other symptoms of gastritis, are here more observable; or as this part is supposed to possess little sensibility and where the substance of the liver is primarily affected, the pain is more obtuse and fixed in the region of the liver or is referred to the back, the breathing is less anxious and the pyrexia is far less acute, especially at first, but the pain and fever will increase as the inflammation extends to the membranes; the inflammation

on the concave surface may also be readily communicated to the gall ducts and hence more readily produce jaundice, and Cullen supposes this affection of the concave part, is the only idiopathic hepatitis attended with it. When the inflammation occupies the superior convex part with its peritoneal covering or its ligaments, the pain is acute in the region of the liver like pleuritis and is much increased by external prefsure and the fever is more violent, considerable tension of the side, pulse frequent, strong & hard or if the peritoneum more immediately contiguous to the diaphragm is affected, the disease is apt to extend to it and occasion very difficult and painful respiration, dry and frequent cough, acute shooting pain in the thorax, extending to the humerus and clavicle of the affected side.

But mostly the symptoms predominant in the sensible enlargement of the parenchema of the liver influencing, by distension, its investing membrane, resemble exactly those peculiar to membraneous inflammation. And these symptoms characterizing the particular part affected, my (Dr Thm.+) observation during a practice of many years in the W. Indies and in England, does not enable me to say are so unequivocal as represented by nosologists; Case a woman

+ R. Thomas' Practice of Physic

aet. 70 muscular and sanguine was seized with symptoms indicative of inflammation of the concave surface and the liver appeared enlarged, it suppurated on the convex surface and discharged externally, and soon her usual health was restored, a small fistula remaining for one year when in a fit of sneezing a gall stone 1 inch in diameter was discharged it healed and she lived several years. Prod.

"It is probably, the acute species is an affection of the external part of the liver while the chronic is of the substance of the liver," [*] "Or the acute is of the extremities of the arterial or nutrient vessels and the chronic is of the veins or secretory vessels, yet so that one may easily follow as a consequence of the other," V.S. [‡] Though there is no evidence or probability of this last and the former distinction is merely conjectural [‡]. But Saunders [‡] supports this distinction by supposing that as the living power or energy of any organ is, caeteris paribus, in proportion to the arterial blood circulating through it, that there is something in arterial blood that fits an organ for active and vigorous purposes and by far the greater portion of blood passing through the liver is venous which is less fit for active purposes than arterial, so there are grounds for believing that chronic inflammation of the liver is, of the vena portar: and the acute is of the hepatic artery. But as

[*] Cullen's Practice vol 1st. Sect. 417
[‡] Saunders on the Liver, page 311.
[‡] Van Swieten's Commentaries on Boerhaave's Aphorisms, 915 apho

The blood distributed by the branches of the vena portar: in the liver must be so far exhausted as to be incapable of all the uses accomplished by arterial blood in other glands and although the vena port: be peculiarly adapted to secrete bile, it is not capable of supplying the natural energy to the substance and vessels of the liver, so it is necessary that arterial blood be sent to this gland through a branch of the arterial system and this lesser vessel like a tendril accompanies the greater, the vein. Now

Allowing, that arterial blood nourishes the organ and together with the nerves supports its actions and that the venous blood is merely the pabulum of its secretion; it is known, that, in the same proportion, the action of any part is increased, so is this support of vital energy more abundantly supplied to such part; so no increased action can take place in the secretory capillaries or the minute extremities of the vena port: in any part of the liver, without a corresponding change in the arterial or nutrient capillaries of the same part on whose support all increased action must depend; as these are the agents by which the liver performs its functions and is supported in its action on the venous blood of the portal system: hence it may be concluded that no increased or altered action or in=

flammation can, probably, occur in the secretory capillaries, without an increased or altered action or inflammation in a greater or less degree, in the arterial capillaries, in conjunction with an increase or diminution of nervous energy; it follows, every inflammation of the substance of the liver, whether acute or chronic, is an affection of the minute extremities of both sets of vessels, the hepatic artery and vena portarum.

Diagnosis. The great size of this organ, and its contiguity of surface to so many other important parts and the seat and kind of pain vary so considerably as often to occasion some doubts as to the real viscus affected.

The diseases which are mistaken for hepatitis, are peripneumony, gastritis, rheumatic affections of the muscles in the neighbouring parts, sometimes nephritis &c; sometimes the least pressure under the margin of the ribs, will cause excruciating pain, while in others, as was the case of Dr Johnson[+], the seat of pain and enlargement will be in the centre and even to the left of the epigastrium.

When that part of the liver, in contact with the diaphragm, is inflamed, the concomitant cough and pain on inspiration, often make it difficult to distinguish hepatitis from inflammation in the thorax and have led patients and practitioners to suppose the pleura or lungs were the

[+] Johnson on the Liver, page 63.

the seat of disease, though in most cases it may be readily distinguished from pneumonic inflammation, by the cough not being so severe in hepatitis and being generally unaccompanied with expectoration and generally succeeding not preceding or coeval with the pain and fever in hepatitis, whereas the cough is generally, coeval, at least, with the pain in pneumonia; "I never knew the cough to take place within 48hrs after the pain, when it is very common in hepatitis" Pmb.+ and a gradual and deep inspiration will not augment the pain in hepatitis as much as it does in pneumonia, nor will it produce as much cough and the tenderness on gentle pressure under the margin of the ribs of the right side, will be more sensibly felt or increased in hepatitis; and by the pleuritic pains being less violent and in hepatitis bending to the right causes pain, in pleurisy it does not; and by the less degree of dyspnoea, by the sallowness of the countenance and by the pain of hepatitis extending to the shoulder, this and the difficulty of lying on the opposite side as it occasions pain, when in pneumonia lying on the affected side is most difficult, are rather fallacious diagnostics of hepatitis, for in some violent hep: inflammations, there is no pain in the shoulder and the easiest posture is on the back. Still it is an important fact and should always be remembered, that generally the hepatic lies with most ease on the

+ C R Pemberton on the Abdominal Viscera, page 20

side affected whereas the pleuritic lies with most ease on the opposite side.

From inflammation of the stomach or gastritis, this disease may mostly be distinguished by the absence of gastric sensibility and that irritability which renders gastritis so dangerous and distressing, by the heat and pain not being increased on taking anything into the stomach, which are then extreme in gastritis and by the stomach being able to retain the liquids and medicines received into it without immediate rejection of them, by less prostration of strength, and the febrile symptoms in hepatitis having nothing of that low typhoid type attending gastric inflammation; by the great fulness of the pulse, the colour of the stools and urine, by the seat of disease discovered by pressure and by the symptomatic pains in the clavicle and shoulder; some of which also distinguish it from gastritis

The following are noticed as distinguishing inflammation of this organ from spasm of its biliary ducts, although is seems doubtful, if spasm of its ducts ever exists, except at the termination of the hepatic ducts in the duodenum. From spasm of the biliary ducts, occasioned by impacted calculi, hepatitis may readily be distinguished by the strong febrile excitement and other circumstances at the beginning

by the pain being permanent and there being nausea, by the frequency of the pulse, being upwards of 100, and by the patient always preferring to keep the body in a strait quiescent posture, whereas the greatest ease in spasm of the biliary ducts, is obtained by bending the body forward on the knees; though spasm of the biliary ducts often terminates in inflammation.

From Muscular pain, this being accompanied by little or no fever, is diffused and frequently removes from place to place and is more influenced by every posture of the body, and it generally alternates with rheum: pain in one or more joints of the body.

Also the state of the bowels will enable us to judge of the existence of hepatitis, for in most inflammatory states of the liver particularly of its glandular structure, the bowels are constipated or in a state of dysenteric irritation, while the appearance of the faeces and urine always indicate a greater derangement of biliary secretion, than in inflammation of any contiguous viscus. The lateritious deposit of urine though common to many other internal inflammations, is particularly so in that of the liver. The mind also is more perturbated, both in acute and chronic than in any other species of inflammation

except of the brain, this probably results, partly from the sympathy existing between these two organs, but principally from the suspension or derangement of the biliary secretion which exerts a peculiar influence on the mental functions.

But at the very commencement of acute hepatitis, its diagnosis from inflammation of any contiguous part, is not of material consequence, because the speedy reduction of vascular excitement by copious venesection &c, is of primary importance in each. Though afterwards it is mostly of the highest importance to make the distinction and in hot climats it is always important to discover its nature early.

Examination of the hypochondria Hippocrates gave strict attention to the hypochondria and oftener mentioned it than the pulse. A very nice examination of the liver, is necessary before we can speak with decision or pretty tolerable assurance to ourselves that there is no enlargement of either of the other organs. When the liver becomes enlarged and hardened from any cause, as scirrhus, its hard margin descends so as to be felt through the abdominal muscles under the border of the chest and this enlargement and consequent descent of its edge, is more easily felt by grippiung the integuments, as if expecting to lift the

acute edge of the liver, while the patient is made to stand with the body flexed a little forward, supporting himself with his hands ~~to prevent~~ to prevent the contraction of the abdominal muscles, thus directing the gravitation of the organ to the place where the hand is applied; or by pressing with the finger under the ribs while the patient lies on his back with the knees elevated; by this means we shall be sensible of the elasticity and softness below the liver and the resistence and firmness of its margin. The left lobe is as often diseased as the right, but it is more difficult to be ascertained by examination. Nevertheless the depression of the diaphragm and consequent protusion of the liver from disease of the thorax, as scirrhus of the lungs, gives the feeling of hardness and enlargement of the liver: again by suppuration of the lungs and consequent rising of the diaphragm, the liver is sometimes so elevated as to be further retracted under the false ribs, but in cases of accumulation of liquid matter within the lungs, the liver mostly descends considerably below the ribs; if the accumulation is so immense as to fill the whole right cavity and distend the diaphragm permanently, the liver which is attached to it, will be necessarily pushed downward, but it happens that all collections of fluid ds by their prepsure affect and diminish the capacity

of the lungs, rather than counteract the whole force of the abdi: muscles which are employed in expiration for the elevation of the diaphragm and consequent diminution of the capacity of the chest; but still the liver does sometimes descend, probably from its own increase of size; case, the liver was felt descending to the umbilicus and very hard, it was supposed the principal seat of the disease, but on examination a vast scirrhus of the right lung, was discovered pressing up the heart and its vessels and obstructing the circulation, all the abdom: viscera were distened with blood, the liver was more voluminous than ordinary and nearly of a black colour, but after its substance was opened, great clots of blood were discharged and after being thus emptied, it almost approached its natural size and had not undergone any alteration. And such enlargement of the liver is occasionally combined with dropsy of the pericardium

Prognosis. The utility of this is pointed out by Hippocrates. "If the practitioner foresees and foretells what patients will expire and which of them will recover, he will be much better able to preserve those that are recoverable and in the worst events he will keep clear of blame; and he will deservedly make all persons admire him and esteem him a great physician."

Favourable. This disease is seldom attended with fatal consequences of an immediate nature. If the disease has suddenly appeared without any previous illness and in a healthy strong constitution and if, on drawing blood, the buff be compact, firm and opaque, it is favourable; and where the symptoms are severe, there is reason to suppose, that the disease occupies the membranes, the duration is often short and the termination is mostly in resolution; the disease is sometimes carried off favourably and spontaneously by haemorrhage from the nose or haemorrhoidal veins; by universal and free perspiration; by bilious diarrhoea about the 3, 5 or 7th day; by copious evacuation of thick urine depositing a copious red or white sediment for some days; in some cases by a great increase of bronchial secretion together with other evacuations, and it is not improbable, that a superficial discharge of coagulable lymph, may be favourable, though afterwards forming adhesions; and in a few instances by erysipelatous inflammation of some external part: with an abatement of the fever, pain and other symptoms, following these critical evacuations, the pulse being less frequent and the general strength not materially lowered by the remedies. "They frequently recover where the liver has been much enlarged, though with violent and continued fever;

yet not distinctly hectic" . Thos. Clark on Fevers page 67.

Unfavourable. When the disease creeps on by degrees; the patient is emaciated; the buffon drawing blood, is semi transparent, jelly like, striated and greenish; the most unfavourable symptoms are the general strength much exhausted and lowered by the remedies, at the same time the pain and fever continuing equally violent; when the disease occupies the parenchema, it generally tends to suppuration; hiccup is a bad sign; intensity of fever and pain in the hepatic region confined to one spot and these increasing rapidly for a few days, full and frequent pulse, considerable heat and thirst, dry skin, obstinate constipation & frequent and severe rigors, denote the approach of suppuration: though the suppurative symptoms are not always very obvious. A diminution of pain with weight or heaviness, a sense of pulsation or throbbing and oppression or dull sense of uneasiness instead of pain, succeeding in the right hypochondrium, especially when lying on the left side, pulse more frequent, an increase of the evening paroxism of fever, great thirst, transient flushes of the countenance, succeeded by repeated and severe rigors or unperiodical shiverings, sweats about the face and a propensity to profuse night sweats and other hectic symptoms, show that it has absolutely taken place: in many cases fluctuation is very

apparent. "Where hectic fever has been distinctly formed I have never seen a case recover without the matter was evacuated" Ibid. Sometimes the pain subsides very suddenly, violent and continual hiccup succeeds, cold extremities, sudden paleness of the whole body, low, fluttering pulse and deliquium or sudden and excessive loss of strength, denote gangrene.

Treatment. The general plan of treatment is all that can be delineated, but the adapting it to particular cases must be left to the discretion of the physician. In every case of acute hepatitis, in order successfully to combat the disease, we are first, during the inflammatory stage, particularly when the inflammatory symptoms run high and endanger a termination in suppuration, to check the general excitement of the system and the local inflammation of the organ, as much as possible, by rigidly enforcing the means of counteracting inflammation and strictly pursuing the whole of the antiphlogistic regimen; and to derive considerable benefit from this, it must be done early in the disease, before the inflammation has advanced beyond the probability of resolution. For the disease is obstinate and usually rapid in its progress to suppuration and calls for practice of the greatest energy.

"No season this for counsel or delay,

Too soon the eventful moments haste away!"

And the more prominent part of the antiphlogistic plan, is venesection.

Bloodletting. "I bled to relieve the febrile symptoms, by lessening the inflammatory congestion of the liver and portal circle, to lower the tone of the constitution and thus accelerate the effect of the principal remedy and to further both of these, several doses of cathartics were also given." ‡ Here bleeding in particular may be carried, in a given time, to an extent not common and scarcely warranted in other complaints. "From a robust and vigorous subject, nearly 4th. of blood have been taken in one day with safety and advantage," Cald. † The best means often fail from the inefficient mode of their application. And great care is necessary not to leave any remains, since most chronic distempers take their origin from inflammation here, neglected or ill cured.

General bleeding. When the constitution will admit and the symptoms run high, the pain acute, pulse full and strong, febrile heat and thirst considerable, it will be necessary, at the very commencement or as soon as possible, to adopt general and copious depletion suddenly from a large orifice made in the arm, yet proportioning the quantity to be abstracted to the violence of the symptoms, to the severity of the pain, to the

† C Caldwell see Caldwell's Cullen page 286.
‡ J Johnson on the Influence of Tropical climates page 284

degree of fever present, to its effects and to the circumstances of each individual case. For, topical inflammation demands for relief a sudden effect on the system and is not in the least influenced by a slow evacuation, though the general strength is much weakened, which is greatly to be avoided in diseases requiring repeated evacuations; it is important, therefore, that the orifices should be sufficiently large, to permit ℥viij of blood to flow in three minutes and if longer time is occupied in the evacuation, the benefit in acute hepatitis, may be expected to be less, no benefit at all or even injury may be sustained; and should any accidental circumstance prevent the full flow, rather open a second vein. In warm climates bleeding may be used in greater moderation than in cold. It is always better to take away at once a quantity proportioned to the age and temperiment of the patient and to the degree and extent of the disease, than by repeated small bleedings which only suspend for a short time the increased action, without affecting that prompt check which is necessary for overcoming the disease. And it seldom will be necessary to repeat the venesection, if it has been carried to a proper extent at first.

However the propriety of repetition, will be determined by the symptoms still being violent and no material relief being obtained, the pain continuing equally acute, pulse hard and frequent, by the effects of the previous

bleeding on the pulse and the manner in which it was borne by the system, and by the buff on the blood, after having been drawn six hours, being very firm, compact and opaque, its surface concave and its edges puckered; then very soon again, 7 or 10 hrs. after the first bleeding, a large quantity should be abstracted, to the extent of ℥xij or xvj, sufficient to suspend the increased power of the circulation and producing faintness even to deliquium; this of course must be regulated by the nature of the case, the strength of the constitution and left to the judgment of practitioner. While the pulse remains full and the pain in the side pungent, bleeding is the only remedy on which the practitioner can rely. But neglecting to bleed under such circumstances, there will be danger of suppuration quickly ensuing. It often happens that the first bleeding shows no buff, but that should not prevent its repetition, if otherwise demanded.

But if the blood, after having been 6 hrs drawn, has a buff of a flat surface, a semitransparent and greenish yellow colour with a striated filamentous texture running through it, general bleeding should not be repeated. Pemb.+ The patient may wait about 18 hrs after the first bleeding before a third, should this be thought necessary.

Should the inflammation spread widely over the peritoneum, known

+ C R Pemberton on the Abdominal Viscera, page 25.

by the patient's being unable to extend his chest, without suffering considerable uneasiness and by his leaning forward to diminish the tension of the abd: muscles, bleeding must not be neglected, as our sheet anchor; but it must be repeated frequently, at no distant intervals, if the disease be not disposed to yield. This is a very critical and dangerous period of the disease and the very moment at which, if neglected and allowed to pass, the foundation of all the miserable sequalae of the complaint is laid, from which, evils will accumulate which all subsequent precaution can, never, entirely remedy.

Local bleeding. At the same time, after a large and general bleeding, the most early recourse should be had to repeated depletion from the affected part by cupping over the region of the liver and in 7 or 10 hrs after the first cupping, should the increased vascular action continue unabated, it should be repeated. When there is an objection to cupping, leeches may be substituted and the bleeding encouraged for sometime, but cupping is preferable to leeching as a more copious abstraction and in a shorter period can be obtained.

Some disapprove of bleeding from the system in this disorder and recommend only drawing blood from the neighbouring parts by

leeches, scarifications and cupping. In the milder cases, when unattended with pain and pyrexia or where there is less power in the system or the disease has followed a bad inter or remittent fever and the patient is consequently in a cachectic state, then local depletion may be sufficient and preferable.

The general and local depletion should be carried to the extent of relieving the pain, at least of enabling the patient to bear pressure over the liver with less inconvenience. "Large and extensive bleeding is the most successful mode of treatment in this and other inflammations" Faithhorn+

Blistering. After full and judicious bleeding general and local, without abatement of the symptoms in consequence of these means, or the pain still continuing though more obtuse, a large blister applied on the affected part strongly cooperates with the views of bloodletting in attempting resolution and often relieves the local pain in the side. And should it be inclined to heal too rapidly or before the desired intention is obtained, a fresh one must be applied. And their duration and repetition should be regulated by the same discrimination as in bleeding. But a quick succession of blisters in the vicinity of an inflamed organ, prevails more over the inflammatory action, than a long protracted

+ on the Liver page 24

discharge from a single vesication by stimulating ointment:" and from experience I can not too strongly recommend this mode of application."+ Certainly where the disease occurs in a debilitated system, pulse small, after judicious bleeding regulated to the constitution and the symptoms and active purging, the pain still continuing but more obtuse, tenderness and fulness yet remaining, frequent blistering will be attended with the most pleasing effects in diminishing these symptoms. And from some little experience I suppose that their application should be in quick succession and not continued on so long as to render the blistered surface so raw and excoriated as to increase very much the irritation and febrile excitement of the system, especially if it affects the urinary organs; to avoid these and especially the agonizing effects of the last, where there is reason to apprehend its occurrence, the blister should be removed after 5 or 6 hrs. or before the cuticle has been broken and a bread and milk poultice applied over the part, this will be attended with a plentiful discharge of serum and it may be 2d or 3d renewed; thus the discharge will be fully equal to what is produced by a blister after its full period, without producing as much febrile irritation as a blister causes during its operation and the discharge thus produced may be continued to the powerful assistance

+ Saunders on the Liver page 315.

in the reduction of the general excitement. "A large blister over the affected part repeatedly appeared to remove or abate the inflammation and always relieved the pain in the side and shoulder and the cough, and had much better effects than bleeding, as the extent to which venesection could be carried in warm climates and in relaxed habits seldom procured relief." Curtis on the Diseases of India page 165.

Stimulating frictions. In the milder cases or where blistering is objected to, spts. turpentine or the nitro-muriatic sponging 3ce a day so as to keep up a rubefacient effect, is worthy of trial, but if great tenderness of the side exist, perhaps the action of friction would increase the inflammation.

Cool air. Together with these more active measures in the pursuance of a strictly antiphlogistic plan, should be joined the free admission of cool air into the apartment of the sick; being careful not to check any perspiratory function.

Cool drink Thirst should be assuaged by copious quantities of cooling saline drinks, impregnated with veget. acids; for it is reasonable to suppose, the thirst in febrile complaints, if not constantly relieved, will aggravate the existing symptoms.

Vegetable diet The use of low vegetable or gruel diet, as tapioca and the mild farinacea in a thin form, is strictly to be enjoined at the commencement, and by no means admit, but carefully shun all animal food, in broths or otherwise. The stomach probably is here, generally in a condition ill prepared for vigorous exertion of its powers; hence all food introduced into the stomach and not digested, either on account of its quality or quantity, will by its presence and by ~~or~~ inducing flatulent distention, and by pressure on the liver and distress it thus occasions, act as an irritant to the whole system, instead of gently administering, according to the powers of digestion, light nutriment to the system.

Purging or emulging the biliary ducts should immediately follow bleeding, for however rapidly the tone of the whole system be lowered by large and repeated bleedings, general and local, still in consequence of the peculiar nature of the hepatic circulation, inflammation and other diseases of the liver, have a peculiar character and require a treatment in some measure specific. And the patient can not enjoy security from present or future suffering and danger, till the regular and healthy secretion of bile be restored; which is suspended or much obstructed in all highly excited states of the general

system and of the liver in particular; the thinner parts of the fluid being taken up by the absorbents, during this state of the organ and the more viscid remain gorged in the pori biliarii and excretory ducts. For in these cases the liver is like the female breast gorged with blood and stagnant milk, which may be leached ad libitum, unless the lactiferous ducts are evacuated of their accumulated contents, suppuration will result, but the inflammatory action in the breast often subsides spontaneously when these distending and irritating causes have been removed, by doing little more than emptying the lactiferous ducts and repeating it from time to time: so in hepatitis, unless the biliary ducts are emptied of their depraved secretions, confined by the inflammatory state of the liver, there is a hazard of abscess, chronic inflammation or disorganization in this viscus. Occasionly in acute hepatitis, a hurried secretion of ill conditioned bile, does take place. And even when the function is restored, the fluid secreted is very unhealthy at the beginning

On this account and to obviate the probability of present suppuration or chronic induration, endeavour by all available means, as soon as possible, to reinstate the biliary secretion and relieve the general distention of the liver, by emulging its accumulated secretion which is of primary

importance and should always be kept in view. And

This result is obviated partly by powerful local and general bleedings and particularly by paying attention to such medicines as at once act on the biliary organs and on the whole line of the intestines; hence in purging two objects are to be attained, first to reduce the plethora of the portal circulation and secondly to free the biliary tubes and restore the secretory function.

Therefore, prescribing **saline cathartics** only, for the purpose of producing many liquid evacuations without irritation, as they have little effect on the orifice of the excretory duct of the liver and act chiefly on the mucous glands or exhalants of the stomach and intestines, is an error. Still by thus increasing the intestinal secretions and producing liquid evacuations, they divert the determination of blood from the vena portarum and thereby lessen the distention of the inflamed gland.

Whereas, the **mercurial** preparations are as well ascertained to have a powerful influence in exciting the secreting and excreting vessels of the liver, as that they augment the flow of the salivary gland. And this peculiar power over the biliary system is independent of their cathartic effect, as the action of mercurials on the biliary glands is considerably weakened or diverted when they produce a sudden

and full cathartic effect themselves or are joined with other purgatives that hurry them through the bowels.

In the mean time, from this consideration and in aid of the preceding remedies, it is highly expedient thoroughly to clear the alimentary canal and to keep it perfectly open by gentle laxatives: first by copious purging with calomel alone or combined with jalap or comp: ext: colocynth aa gr ℥ss or in addition pulv: antimonialis and opium, followed by jalap, oil or strong infusion of senna with salts or other cathartics, administered from time to time, which frequently procure copious discharges, at first very different from natural faeces or healthy bile. Or after thoroughly evacuated, "calomel grij, rhubarb & soap aa grsij, and occasionally a dose of rhubarb and ipecac: or c. tartar and for the first few days along with the mercury ~~[illegible]~~, may be given a few cooling nitrous powders formed of nitre, gum acas: and c. tartar, especially if there be heat thirst & pyrexia with a view to abate these and render the operation of mercury milder"; Crts.+ The following answers in most cases to evacuate the bile and clear the intestines ℞ Sulph potash ℥j, Comp: extr: colocynth grs xviij, calomel grsx, ol: carui gttij, div in eight pills, two every second hour till the bowels fully respond, taking after each dose 3 table spoonfull of

+ Curtis on the Diseases of India page 108

the infusion of senna ℥iss, tinct senna ℥ss or tinct jalap, mag: sulph ℥j, syr: ros: ℥iij, aqua piment: ℥j Mft. Some prefer the cooling cathartics early and freely administered, as a strong infusion of senna with nearly as much salts as it will hold in solution, to procure daily 1 or 2 evacuations, constitutes an excellent purge, especially intermediate to the moderate use of calomel or in aid of the mercurial cathartics; after having freely operated, it may then be exhibited in smaller doses, every 3 or 6 hrs, to keep up, by their stimulus, a free evacuation from the bowels of their secretions and prevent distention of the inflamed viscus. Saunders says, the saline cathartics exhibited in a very dilute form are less liable to offend the stomach and produce nausea. But for keeping a due action on the liver and digestive organs, for sometime after any degree of active inflammation, small doses of calomel, antimony and some other cathartic, as colocynth will be exceedingly useful, and their operation should not extend beyond 1 or 2 motions daily, which when effectual will be succeeded by agreeable sensations and freedom of spirits, a sure criterion of a salutary influence on the liver: or after the more active, the milder means may be employed to regulate the secretions of the bowels and skin. Calomel grs iv, nit: potash ℥ij, pulv: ipecac: grs ij

or tart: antimony, g: arab: ℥ij: div in pulv: six, one every 4hrs in honey, and 1hr after each dose, take 3 tab: spoons full of mag: sulph ℥iij; liquor amon: acet: ℥j; syr: ros: ℥v; aqua distill: ℥vj: Mft.

Injections. Occasionally emollient injections to favour the operation of cathartics or to mitigate griping and tenesmus, may be beneficially used, or when from the frequent exhibition of cathartics the patient feels a strong aversion to them or has irritability of stomach, injections may occasionally be substituted and in some instances the patient will say with far more relief.

And every discharge from the bowels must be carefully inspected, to obtain sure information of the character of the secretions, and without this, the practitioner will be ignorant of information of the highest importance and of essential interest to the welfare and security of his patient. And this inspection is required in all hepatic diseases

When by these remedies, the inflammation has been materially abated, the pain still continuing but more obtuse, as in other inflammatory complaints, further aid may be given to diminish the force of the circulation by exciting ——

diaphoresis, particularly by nauseating doses of tart: antimony,

to which may be joined nit: potash, ℞ saline draught ℥ij, nit: potash grs xv tart: antimony grs ¼, syr: ℥ij, Mft for a febrifuge draught; with the plentiful use of mild diluent and cooling liquids; assisted by the pediluvium; and the warm bath, if the skin continues hot and dry and the pain in the hepatic region severe, may be proper; "the warm bath at 90 a 96°, particularly when considerable fever existed, and James' powders after bleeding I have used with attention" Clark.† "I have evidently derived more benefit from fomentations, epithems and the warm bath than from blistering. A large piece of flannel folded and wrung out of hot water was applied over the abdomen and renewed when dry, which was wrapped over by a calico swath surrounding the body, thus a moist and steady warmth is obtained more easily and continued with less fatigue to the patient or danger of giving cold" Good's Study of Medicine page 263.

This refrigerating treatment should be pursued with such variations as the circumstances and progress of case require, for about one week or untill the inflammatory disposition be wholly subjugated.

If after proper means the inflammatory symptoms do not abate, suppuration may be apprehended, especially if rigors attend.

Mercury. Acute hepatitis may be cured, on its first attack

† J. Clark on Fevers page 70.

without respect to the future health of the patient but merely regard his present relief, as pneumonia is; as it readily yields in northern climates to the ordinary means of depletion. But the surest means of guarding against future derangement of function and structure in this important viscus, is to restore its natural and healthy secretion.

Though in every inflammation of the liver with febrile excitement and particularly in cold latitudes, calomel as a purge is advisable at the commencement; still given to promote salivation, on the first attack, is improper and should not be used, as it would increase the arterial action already over excited, yet when properly used this remedy appears to be very efficacious. For this

A certain period of the inflammatory attack is to be chosen, when the bowels have been thoroughly cleared and the excitement or urgent inflammatory symptoms, in a certain measure reduced, after strictly pursuing the antiphlogistic plan for 4, 5 days, the disease still not giving way and the alvine evacuations deficient in this secretion; then mercury will come in with the greatest advantage and resort should be taken to its aid, to the extent of producing a slight impression on the mouth or tenderness of the gums, which (Drs H. & Clk of Fin.)

seldom fails to remove the complaint. But "this remedy or mercury to the extent of producing salivation has not been so effectual in Phila^da^, and it only appears to be serviceable in the acute form, when it acts as a purgative and not when it operates by inducing salivation," W. Curry†. Possibly it is meant when free and healthy biliary evacuations were procured, its salutary effects appeared, but when it prematurely salivated or spent its action principally on the gums and salivary glands without emulging a healthy biliary secretion or relaxing the gall ducts, no beneficial effects were produced. And sometimes the patient will bear a long continuance of the mercurial plan without any affection of the mouth and gradually and insensibly improve under it, the soreness and tension subsiding, the cough diminishing, the pulse becoming slower, the heat and dryness yielding to a pleasant moisture of the skin which are prognostics of a favourable issue. Dr. B‡ a respectable medical practitioner, relates a case of hepatitis which occured to him with a large lump of the right side which was completely removed under the use of calomel for some time, which however had no effect on the mouth; probably it emulged the liver, restored its secretory functions and operated on the bowels. "It is in recent attacks of hepatic complaints

† W. Curry – View of the Diseases of the United States page 136.
‡ Dr. G. Benoell of Germantown

that mercury has the best effects, where if early and freely used till the mouth be affected, after bleeding, blistering and the free use of laxatives, I never saw a case terminate in suppuration" Dr† of Calc.ta "The transition of acute hepatic inflammation into a state of resolution is not immediately followed by a healthy condition of that organ, but it remains for a time in debility, disposed to relapse into a chronic state and this, "probably, the proper time for mercury and by acting as a mild stimulus on the vascular system of the organ, when protracted a sufficient time, it produces effects terminating in health." ‡ "And it is from the similarity which the E.I. India hepatitis bears to this state, excepting that it is liable to run into suppuration, as well as to relapse into a chronic form, that the success of mercurial treatment has proceeded" Jhns.‡ And immediately he clearly intimates that the indiscriminate use of mercury during the first inflammatory state, in northern latitudes, is an abuse of the medicine. "As soon as the pain in the side, the heat and fever had been a little abated by the use of previous remedies, mercury was immediately used, or sometimes when the case was very urgent, even when considerable thirst, heat and general fever were present, provided

† Dr. Dick of Calcutta, see Saunders on the Liver page 257.
‡ Saunders on the Liver page 329.
‡ T. Johnson on the Influence of Tropical climates page 300

provided the pulse was not hard, the pain in the side somewhat abated or was not very constant & acute: often the patients had too far gone, before they came under our care, but when the circumstances were tolerably favourable we mostly succeeded in curing the disease." Crts.‡ And when it is said (J.Cr)† that the early and free use of calomel, has saved many a ℔ of blood which must otherwise have been evacuated to alleviate the urgent inflammatory symptoms, and that some cases occurred to him lately, particularly illustrative of the benefit derived from calomel in all inflammatory affections in which the liver is concerned; these cases had been mistaken for pleurisy and general & local bleeding, purging, blistering and diaphoretics had been given; when, after the failure of these remedies to give considerable or permanent relief and from other symptoms, the disease was suspected to be hepatic, mercury was given in his usual form and with his accustomed success, of removing the pain and difficulty of breathing. Now in these cases, the only ones mentioned illustrative of the effects of mercury in his practice, depletion had been previously, and probably from their mistaken nature, powerfully, used, and after it had failed to afford considerable relief, mercury was used with

† Curry, see Saunders on the Liver page 331.
‡ Curtis on the Diseases of India page 106.

success. These cases, then, only confirm the benefit of calomel after copious depletion; and he says calomel exhibited in his form, 3.4 grs every 4.6 hrs, generally proved cathartic and that its good effects were chiefly owing to this (cholagogue) power: besides, immediately preceeding, he says, the use of calomel is free from the objections against a general mercurial action, as its good effects may be more speedily obtained than in any other way, but without occasioning any general operation and consequently without the injury sometimes experienced from mercury carried to this extent (alluding possibly to its effects on very feeble and irritable constitutions) and referring to Saunders, he says, Your practice respecting the use of mercury when employed to operate on the system at large, exactly accords with what I have said on its general operation and is not to be applied to calomel in its local operation. Hence it is evident he does not allude to the general operation of mercury for which he acknowledges the system ought to be prepared agreeable to Saunders, but to calomel in its local operation, and with it no doubt depletion was used. And his chief dependence was on its acting specifically and being a cholagogue or evacuant of bile and thus lessening the general distention

of the liver; hence also the febrile excitment is diminished and thus less blood was of necessity drawn; calomel does this by a relaxing power over the confined biliary ducts, for other medicines of far greater cathartic power, are not of equal service and even calomel, when it passes very speedily through the bowels, is often of little advantage; but by emulging the biliary ducts, is the mode in which chiefly it proves successful. And the bile evacuated by stool, is the evidence and measure of its salutary operation; often its relaxing power has to be assisted by pulv: antimonialis and especially opium gr; every 6hrs or oftener if the urgency of the pain renders it necessary and thus repeatedly exhibited, the urgent symptoms abate considerably; many hours before any alvine evacuation takes place, of course before it could be said to act as a cathartic; and sometimes when no evacuation followed, cathartic medicine had to be given, to secure the relief gained and empty the liver while under the relaxing influence of calomel, and thus to prevent the return of pain and dyspnoea. And this local mercurial action is not solitary; in the practice of Mr. C.+ of rubbing several grains of calomel daily on the gums, the salivary glands were quickly affected and ptyalism induced, while the system was so little influenced that the shankers remained the same or if healed

+ Mr. Clare see Saunders on the Liver page 336

they quickly broke out again. And it is generally admitted that the alterative effect of calomel, is not so effectually obtained when a sudden salivation is induced, as when calomel is more gradually introduced into the system; and, mostly ptyalism is merely a sign of its general operation. From the costiveness that usually prevails it seldom is necessary to unite the calomel with opium, but when the stomach and bowels are in a state of morbid irritability and to make the effect more certain, as also when the cough is very distressing and prevents sleep, a small portion of opium may be joined with it; as calomel grs ij, iv with opii gr ¼ or extract of white poppy gr ½ every 3, 4 hrs, this will be attended with important and salutary effects and allay the irritation. But where the stomach is extremely irritable rejecting everything and even calomel and opium prove too irritating, the continual retching increases the pain and aggravates the disease, here the best effects may be obtained from calomel, carefully triturated, with lime water, converting it into a dark oxyde or from pilulae hydrargyri, ℞2, every night joined with opium which may be given to the amount of ℞ gr j every six hours, according to the urgency of the pain; or hydrargyri ʒj opium, camphor aa ʒss, syrup q.s. mft. lx pills, dose 1, 2 according to the violence of the symptoms; this is much less irritating than calomel, is retained with ease and allays

the pain retching and violent symptoms of hepatic inflammation When this succeeds in producing a moderate diaphoresis and bile is evacuated in the stools, the progress is favourable. But as the state of perspiratory process is a visible and certain index to the biliary secretion, so when the surface is constricted and the stomach will permit, gr. of pulv. antimo should be added to each dose of calomel and opium, these form a valuable auxilliaries to calomel, soothing many uneasy sensations of the patient, and determine to the surface which is important in this as well as in most other diseases and assist the calomel in its relaxing influence over the biliary ducts. A case of jaundice occurred last spring in the Alms House, which did not yield to the mercurial treatment, at least during its exhibition, then minute doses of tart. emetic were repeatedly given during the day for 5 or 8 days, and this treatment was attened with compleet success in removing the jaundiced colour of the skin and consequently in removing the obstruction in the ducts of the liver. And "The actions of nausea and vomiting increase the secretion of bile hence emetics are improper where bile is secreted in too great quantities" S.+

Yet when the mildest form of mercury, though guarded by opium and other sedatives can not be born, the ointment may be rubbed in, though internal ly exhibited mercury appears more effectual in restoring the healthy action

+ Saunders on the Liver page 176.

of the liver. Or should we wish speedily to induce a mercurial action mercury may be both externally and internally employed.

And some consider the more proper mode of introducing mercury into the system, to be by friction; rubbing a small quantity of ointment every night or oftener on the right side, in preference to any other part; but except the gentle exercise given to the part by friction, thereby assisting to emulge the biliary ducts, there is no material advantage in rubbing it on this part, provided the effect on the general system be equally strong, no matter what part be chosen.

If rubbing the mercury on the side gives pain or inconvenience to the patient, the unction may be applied to the groins, untill a slight degree of salivation or very obvious effects on the constitution are produced; by these means the swelling and hardness may generally be dispersed; using ℥ss, ʒj, of ointment 1ᵃ 2ᵉ a day. And to assist in the discussion of the inflammation and to obviate any severe effects from the mercury, a gentle purgative, as an infusion of senna and salts should be given every several mornings. But if the pain and fever be reproduced the inunction should be immediately omitted, as it will be of no advantage under those circumstances.

If the pain remaining, diminish; no fever be reproduced and the disease yield readily, a short course of mercury will be sufficient, say for 8, 10 days And as soon as a brassy taste is perceived in the mouth, a mercurial foetor in the breath or a spungy redness of the gums, the medicine should generally be discontinued for a while or given in small quantities every 1, 2 nights, to prevent ptyalism which in this climate at least, is often unnecessary. But if it does not readily yield and sometimes, the disposition to terminate in scirrhus or diseased structure, is very great and can not be resisted by a moderate mercurial action, here instead of a change of the pulse and tenderness of the mouth, produce a gentle salivation which being continued for 5, 6 weeks and then gradually laid aside, giving it only once every 2, 3 nights, generally will effect a cure. And Johns.[+] speaking of the effects of mercury, opium and antimonials in tropical climates says; the secretion of healthy bile — the flow of saliva — and a gentle perspiration, were synchronous effects of the medicine and indications of approaching cure; but it was necessary to maintain these effects by smaller doses, till every symptom of the disease had vanished, a clear countenance, keen appetite and regular bowels had returned and health and strength had completely been restored.

[+] Johnson on the Influence of Tropical climates page 286.

If there be considerable difficulty in introducing mercury into the system chose for the inunction parts having the finest cuticle or where the cuticle has been removed by a blister. In hot climates, when the liver is fast verging to suppuration, such is the torpor of the lacteals and lymphatics, that there is great difficulty in introducing a sufficient quantity of mercury to saturate the system and affect the mouth, by the largest doses internally and assiduous inunction; "I have often been able to prognosticate the difficulty that would be experienced in producing ptyalism, by observing the appetites of the absorbents on the surface, while ℥ij of ointment were rubbed on the thigh or arm" Johns.+

In India chief reliance is placed on this remedy and it is often exhibited in much larger doses, than seem advisable in more temperate climes. "I have myself taken grs xx calomel ʒss a day, without the slightest inconvenience from the quantity; large doses (here) sit easier on the stomach and give less irritation to the bowels than small ones" Johns. But "I have known bad effects from the violent operation of mercury, as excessive debility which, though at first the disease has been removed, I suppose, has often laid the foundation of relapses" Clark.

Whenever the mercurial preparations are indicated, the nitro-muriatic acid will be useful and where mercury is highly injurious

+ Johnson on the Influence of Tropical climates page 288.

from delicacy or peculiarity of constitution or from other causes, the nitro-mur: acid will be safe and advantageous "Where the pulse is quick and (much) inflammatory tendency I think it i.e. nitromuriatic acid would be injurious; however I think I never saw a case of acute hepatitis that did not, at the commencement or soon after partake of the chronic. Where the risk of abscess is great the acid alone should not be trusted, but though insufficient itself, it greatly aids the use of mercury in preventing a termination so lamentable" Sct.† "Sometimes after mercury has been used and salivation induced and there still remains something of the complaint, nitric acid comes in very well and will often remove the remains of the disease, gtt ℞xx in 1 pt. water, at first, during the day". O. A degree of obesity generally succeeds the exhibition of this medicine and the cure of the disease, from the renewed energy communicated to the digestive organs. On entering upon a course of mercury, about ℥ij of a slight infusion of some bitter, as quassia or gentian, should be given ℥ss a day, to which may be added sufficient n: salts to procure an evacuation every 12 days. And by degrees the diet may be improved, as the improvement of the constitution and digestive organs will admit, by the addition of animal broths, light animal food and that best suited, is such as is attenuant

†Scot on the Use of Nitromuriatic acid see Medical Recorder Vol 1st No 1 page 88 & 89.

nutritious and easy of digestion, avoiding salty meats and greasy substances; still remembering, the diet should be of the mildest kind long after convalescence has been established, otherwise there will be a risk of reproducing inflammatory excitement, before health be perfectly restored.

If, when the disease is going off, the tired patient refuses further help or if timely treatment for the remains of the disease be neglected, chronic disorders will be left and prove extremely difficult of cure, particularly scirrhous indurations.

When no further yellowness is observed in the eye, the pale yellow or waxen colour disappears from the face, the urine and faeces recover their natural appearances and there is no pain or oppression about the right hypochondrium, especially after eating or filling the stomach or after somewhat more than usual exercise, the cure is complete; and more especially if for several weeks after, there be no return of the complaint.

In winter patients with this disease do not generally fare so well.

Termination Acute hepatitis like other inflammations may terminate in resolution, suppuration, transudation of

lymph and adhesion, chronic inflammation, gangrene or scirrhus. When the symptoms of active inflammation have been checked, though not effectually removed by the antiphlogistic practice, the disease frequently becomes chronic and terminates in scirrhous induration of the organ, the countenance has a peculiar sallowness, though not the appearance of jaundice, expressive of a morbid condition of the liver, with indolence and want of action in the circulating system. In this diseased state the liver first becomes swelled and hard but afterwards assuming a clay coloured hue, becomes diminished in size with some diminution of weight and compact in the advanced periods, agreeable to the laws of absorption. And this state of the organ may exist without any previously active inflammation, especially in the E & W Indies, or by the abuse of ardent spirits; when confirmed it is unmanageable and the patient often languishes a long time.

Appearance after death. "In hot climates a sound liver is rarely to be expected after death" M. It is often much enlarged and hardened to the touch, colour more deep purple than natural and its membranes more or less affected with inflammation, often extensive adhesions

to the neighbouring parts and sometimes large abscesses containing pus are formed in its substance; sometimes biliary calculi; in a few instances the liver has been found in a putrid state resembling honey comb; tubercular; or hydatids have sometimes been found in it or lumbrici in its ducts; occasionally with a coriaceous tunic; case, died of dropsy, the whole liver was dry, black, useless and appeared like leather shrivelled by heat and scarcely equaled two fists in bulk." J. (in Ephem.) +

When inter; or remittent fevers are conjoined with an affection of the liver, as every accession of the fever must necessarily increas the disorder and this again tend to increase the fever, if the pain in the side should be violent; hence the propriety of checking these as soon as possible by bark and mercury externally; the tonic and stimulant powers of the bark are much less to be dreaded than the effects of the febrile paroxysms.

Sometimes the same liver will be suffering, in one part from all the symptoms of active inflammation, even proceeding to a change of organization, while it is insensible, enlarged and inactive in another. And it is probably, this mixed state of derangement, which occasions those singularly changeable and almost indescribable symptoms so frequently experienced in hepatic affections. Thus the acute frequently partak-

+ Van Swieten's Commentaries on Boerhaave's Aphorisms, page 262, aphorism 950.

of the nature of chronic hepatitis.

Finis.

Wm Ashmead
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